Amendments to the Claims

The below listing of the claims replaces all prior versions and listings of the claims in the subject application:

Listing of the Claims:

1. (currently amended) A sensing method comprising the steps of:

providing a Fabry-Perot cavity, including a pair of partially transmissive, partially reflective, surfaces wherein a first of said surfaces is flexibly suspended adjacent and parallel to a second of said surfaces so that a gap exists therebetween;

providing a source of variable electrostatic potential for providing a selected electrostatic potential between said first and second surfaces so that said gap is adjustable;

providing a translucent chemical layer on said flexibly suspended first surface outside of said gap;

providing a photosensor attached to said second surface outside of said gap; and

providing a source of light, said light for irradiating said photosensor through said chemical layer and said first and second surfaces wherein said light is also partially reflected between said surfaces;

providing a sensing environment wherein an agent undergoes a reaction with said chemical layer and a ~~sensing~~ reference environment wherein said reaction does not occur;

measuring a change in spectrum of an output of said photosensor between said sensing ~~condition wherein said agent undergoes said reaction with said chemical layer~~

environment and said ~~sensing condition wherein said reaction does not occur~~ reference environment; and

measuring a change in spectral intensity of said output of said photosensor between said sensing ~~condition wherein said agent undergoes said reaction with said chemical layer~~ environment and said ~~sensing condition wherein said reaction does not occur~~ reference environment;

wherein said gap and said light are selected to provide a desired output of said photosensor.

2. (currently amended) [[A]] The sensing method according to claim 1 wherein said steps of

providing a Fabry-Perot cavity;

providing a source of variable electrostatic potential;

providing a translucent chemical layer;

providing a photosensor;

providing a source of light;

measuring a change in spectrum; and

measuring a change in spectral intensity

are provided on an integrated circuit.

3. (currently amended) A sensing method comprising the steps of:

providing a Fabry-Perot cavity, including a pair of partially transmissive, partially reflective, surfaces wherein a first of said surfaces is flexibly suspended adjacent and parallel to a second of said surfaces so that a gap exists therebetween;

providing a source of variable electrostatic potential for providing a selected electrostatic potential between said first and second surfaces so that said gap is adjustable;

providing a translucent porphyrin layer on said flexibly suspended first surface outside of said gap;

providing a photosensor attached to said second surface outside of said gap; and

providing a source of light, said light for irradiating said photosensor through said porphyrin layer and said first and second surfaces wherein said light is also partially reflected between said surfaces;

providing a sensing environment wherein an agent undergoes a reaction with said porphyrin and a ~~sensing~~ reference environment wherein said reaction does not occur;

measuring a change in spectrum of an output of said photosensor between said sensing ~~condition wherein said agent undergoes said reaction with said porphyrin~~ environment and said ~~sensing condition wherein said reaction does not occur~~ reference environment; and

measuring a change in spectral intensity of said output of said photosensor between said sensing ~~condition wherein said agent undergoes said reaction with said porphyrin~~ environment and said ~~sensing condition wherein said reaction does not occur~~ reference environment;

wherein said gap and said light are selected to provide a desired output of said photosensor.

4. (currently amended) [[A]] The sensing method according to claim 3 wherein said steps of

providing a Fabry-Perot cavity;

providing a source of variable electrostatic potential;

providing a translucent porphyrin layer;

providing a photosensor;

providing a source of light;

measuring a change in spectrum; and

measuring a change in spectral intensity

are provided on an integrated circuit.

5. (original) The method of claim 3 wherein said first partially transmissive, partially reflective, surface is a gold surface.

6. (original) The method of claim 3 wherein said photosensor is a photodiode.

7. (original) The method of claim 3 wherein said source of light is a laser.

8. (original) The method of claim 7 wherein said laser is band limited laser.

9. (original) The method of claim 7 wherein said laser is of a variable wavelength.

10. (canceled)

11. (canceled)

12. (canceled)

13. (canceled)

14. (canceled)

15. (canceled)

16. (canceled)

17. (new) An optical chemical sensor comprising:

a Fabry-Perot cavity, wherein the Fabry-Perot cavity comprises first and second partially transmissive, partially reflective, surfaces wherein the first surface is flexibly suspended adjacent and parallel to the second surface so that a gap exists therebetween;

a source of variable electrostatic potential configured to provide a selected electrostatic potential between said first and second surfaces so that said gap is adjustable;

a translucent chemical layer on said first surface outside of said gap;

a photosensor attached to said second surface outside of said gap; and

a source of light, said light source configured to irradiate said photosensor through said chemical layer and said first and second surfaces wherein said light is also partially reflected between said surfaces.

18. (new) The optical chemical sensor of claim 17, further comprising:

a sensing environment wherein an agent undergoes a reaction with said chemical layer; and

a reference environment wherein said reaction does not occur.

19. (new) The optical chemical sensor of claim 18, wherein the Fabry-Perot cavity, the source of variable electrostatic potential, the translucent chemical layer, the photosensor, the source of light, the sensing environment, and the reference environment are provided on an integrated circuit.

20. (new) The optical chemical sensor of claim 19, wherein the translucent chemical layer is porphyrin.

21. (new) The optical chemical sensor of claim 19, wherein the translucent chemical layer is metalloporphyrin.

22. (new) The optical chemical sensor of claim 18, wherein the first partially transmissive, partially reflective, surface is a gold surface.

23. (new) The optical chemical sensor of claim 22, wherein the photosensor is a photodiode.

24. (new) The optical chemical sensor of claim 23, wherein the source of light is a laser.

25. (new) The optical chemical sensor of claim 24, wherein the laser is band limited laser.

26. (new) The optical chemical sensor of claim 25, wherein the laser is of a variable wavelength.